SO/PHI data request form

(Cruise phase + first science orbit; SO/PHI-Team internal version)

Flux emergences directly related to coronal bright points

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Science case (stay on one slide):

Please also state, why is PHI needed; why is the science unique?

- Coronal bright points typically exist for one to several hours, with a fast flux emergence phase in the beginning. Capturing the early phase of the formation of the bright point will be of high interest because, in particular, to understand the formation of the bipolar magnetic field concentration using PHI. Naturally, this is closely linked to a more general study on the structure of coronal bright points, but here the focus should be on the initial phase. In particular, when relating the coronal dynamics in EUI/HRI/174 observations to the interaction with the pre-existing magnetic flux (through magnetic field extrapolations) this should provide valuable information on the energisation of coronal bright points. One central question would be the role of energy dissipation at low height (e.g. through chromospheric reconnection) to energisation with an overlying magnetic field (seen through loop-dominated heating).
- Related to “Coronal bright points, their structure and possible eruption”.

Requirements/data (use additional slide if needed)

Besides best guess requirements, you may also list minimum requirements on the data

- Type of solar feature: **quiet Sun**
- HRT or FDT: **HRT**
- Physical parameters needed (available: B_LOS, vector B, v_LOS, I_c, raw data): **B_los, I_c**
- Total length of observation: **1 hour (or longer to capture more flux emergence events)**
- Cadence (maximum 1 dataset/min): **1 min**
- Pointing needs (disc centre, limb, active region location, particular μ): **QS @ disk center**
- Orbit needs (spatial resolution/co-rotation/angle to Earth/angle to other spacecraft): **below 0.5 AU (resolution)**
- Total number of datasets: **60**
- Full frame 2k x 2k or partial frame 1kx1k, 0.5kx0.5: **full frame (to maximize FOV)**
- Full resolution or 2x2, 4x4 binned data: **full resolution**
- noise level (default 10^{-3}): ???
- Co-observations with other instruments: EUI/HRI/174; EUI/HRI/Lya; SPICE
- Special requests: